



Curriculum vitae and Company Resumé **Dr. Kenneth (KB) Fairhurst, PhD, RPF, RDI Resource Design Inc**

Academic History

Ph.D. in Forestry, 2010

Univ. Brit. Col., Forest Resources Management

Research and Dissertation on GEOptics Visual Landscape Apparency

Professional History

1996 ongoing

Professional Forestry Consultant / Owner (our 25th anniversary)

RDI Resource Design Inc

Vancouver BC Canada

Forest Resource Planning / Visual Resource Management

Environmental Assessment

2014 ongoing

Adjunct Professor, Department of Forest Resources Management

Faculty of Forestry, University of British Columbia

2011 ongoing

Annual Contract VRM Specialist

BC Timber Sales

Kamloops Business Area

2014 to 2017

Contracted Lead Specialist

Aesthetics/Visual Quality Environmental Assessment

WorleyParsons Canada

2014 to 2016

Visual Resource Management Instructor, FRST 424

Visual Planning and Simulation Module

University of British Columbia

Department of Forest Resources Management,

Faculty of Forestry

2007 to 2008

Co-Instructor, University of British Columbia

FRST 491, Department of Forest Resources Management,

Faculty of Forestry

1985 to 1996

1980 to 1983

Visual Landscape Specialist, Vancouver Forest Region

British Columbia Ministry of Forests

1984 to 1985

Landscape and Timber Operations Forester

Alberta Forest Service, Alberta Canada

1983 to 1988

Consulting Services in Regional and Urban Forestry

Outdoor Recreation, and Visual Resource Management

Professional Associations

Association of B.C. Professional Foresters

Western Forestry Contractors Association

Safe Certified – BC Forest Safety Council

Associate Member, Collaborative for Advanced Landscape Planning, the University of British Columbia (CALP)

The RDI website provides additional information and examples of our work. It can be found at <https://www.rdi3d.ca>

August 1, 2022

KB Fairhurst's and RDI's accomplishments cover the complete spectrum of Visual Resource Management:

1. Forest Management Strategies, Policy, Practices, Guidelines and Standards

KB Fairhurst (KBF) participated in the original development of the VLM program in BC and was responsible for the original VLM program development in Alberta. KBF has conducted numerous forest planning projects ranging from Provincial strategies through to guidelines and standards. Conducted the TFL 45 Visual Resource Management Strategy now implemented by Interfor in their Forest Stewardship Plan for the TFL. A complete Visual Landscape System (VLS) for the Cumulative Environmental Management Association in Alberta in 2003, VQO re-appraisal of two complete TFL's (TFL 25 and TFL 38). Ken Fairhurst has sat on several planning tables such as the Sea-to-Sky Local Resource Use Plan and Management Plans, and as far back as the Meares Island Planning Team (1980's).

2. Visual Landscape Systems Development

KBF developed a complete Visual Landscape System (VLS) for the Cumulative Environmental Management Association in Alberta in 2003. The VLS is a comprehensive inventory, planning and design process for visual resources within a region that offers guidance to resource development, integration, and cumulative effects to meet visual desired quality targets. The VLS was designed for forestry, mining, energy, and other types of resource planning and development. A precursor of the VLS was developed in 2001 for presentation to the Western Forestry and Conservation Association held in Portland, Oregon.

3. Visual Landscape Inventory

KBF has conducted several complete highway corridor inventories including Highway 97 through the Okanagan Cariboo and Quesnel Forest Districts, Highway 99 Sea-to-Sky Frontcountry Corridor, the entire Chilliwack Forest District, Peace River, Chilco-Chilcotin Rivers, Central Coast waterways, Inside Passage waterway, northern Gulf Islands waterways, Horsefly Lake and River.

4. Integrated Visual Design / Total Resource Planning

The procedure examines biophysical, economic and engineering constraints and opportunities, develops comprehensive resource conforming to the landscape, sets schedules, and provides the needed data to calculate the long-term economic flows while meeting visual quality objectives. KBF has conducted many of these projects following Ministry procedures ranging in scale from single landforms to entire travel corridors. These include an entire TFL in the Queen Charlotte Islands, Lake Errock, Frederick Arm for Interfor, BCTS Kamloops' Tshinakin area on Adams Lake, the Foghorn operating area near Clearwater and the Nadina Lake Integrated Visual Design Plan produced for Houston Forest Products in a mountain pine beetle affected scenic area.

5. Visual Impact Assessment / Environmental Assessment

Visual impact assessments are structured analyses of the effects of land-use alteration in the scenic landscape. Photo-realistic computer-generated visual simulations are produced from key viewpoints; impact is measured by verbal definition, design criteria, and degree of measurable alteration in perspective or photo view. Design alternatives are developed as necessary to achieve maximal operational flexibility while maintaining visual quality objectives. KBF has conducted a great number of these projects throughout British Columbia, numbering currently over 10 per year. Several of these have been used by KBF as case studies in Forestry 491 at the Faculty of Forestry, UBC. RDI has recently mounted links on the BCTS page on the RDI website <https://www.rdi3d.ca> to over 70 VIA projects completed over the past 13 years for BC Timber Sales in the Kamloops Business Area. Our new contract extends us to 2025. These are listed at www.rdi3d.ca on the VIA page.

6. Information and Technology Transfer

Ken Fairhurst routinely conducts custom training courses locally and internationally which emphasize his commitment to excellence in all aspects of visual resource management standards and practices.

- Visualization Component Instructor, FRST 424, Winter 2014 and 2015.

- Co-instructor, Forestry 491 Visualization and Forest Design, Winter Sessions 2007 and 2008. Ken was also the GIS lab instructor for the course. Dept. Forest Resources Management, Faculty of Forestry, University of British Columbia.
- Co-presenter, American Society of Landscape Architects Annual Meeting, San Francisco, October 8, 2007. Session C2: Visual Planning Tools and Processes: New Applications.
- Developer and presenter, Workshop on Using Visual Nature Studio (2006). IUFRO International Conference on Patterns and Processes in Forest Landscapes - Consequences of Human Management in Bari, Italy, September, 2006.
- Organizer and Moderator, Forum on Visual Resource Management and the Practitioner, International Symposium on Society and Resource Management, Vancouver, BC, 2006.
- Developer and Instructor, RENR 5781 - Visual Landscape Management (2002; 2003). British Columbia Institute of Technology. (2-day comprehensive instructional course development and delivery).
- Workshop and guest lecturer: visualization of silviculture treatments to reduce fire hazards in northern Arizona (2001). Coconino National Forest and Northern Arizona University.
- Developer and Instructor, A practical guide for visually effective design of timber harvesting. A half-day workshop for the Western Forestry and Conservation Association (2001). Olympia, WA. September 24, 2001.
- Taught MOF VIA and Landscape Design training courses in several Forest Districts in 2000.

7. GIS, 3-D Visualization and Animation Applications

KBF has produced 3-D visual simulations and animations covering a wide range of topics. These include an assessment of a windfarm in Alberta, Woodfibre LNG BC Hydro 2015 transmission line project Environmental Assessment Application, The Rio Tinto Alcan port facility expansion, 2015 (for a current Environmental Assessment Application), independent power producers' hydro-electric developments and transmission lines for the Skookum Power Project (Run of River Power, 2011), highways, bridges, and bridge settings (e.g., the Culliton Bridge Animation for BC Ministry of Highways), and oil sands mining and restoration in Alberta. The Suncor project in Alberta, completed in 2003, provided a look at revegetation of the Millennium oil sands mine landform structures over the course of 70 years, seen in animated fashion while cruising up the Athabasca River. The Canadian Natural Resources' Horizons Oil Sands project looked at landform construction and closure/vegetation, and facility development in northern Alberta. An animation was also prepared showing the intake structure from the river. A forest health simulation project for the USDA Forest Service Coconino National Forest in Arizona assessed treatment options as they would be experienced from the Interstate Highway. An animated low elevation fly-through was produced for the project. The controversial project won wide public acceptance based on the simulations (<http://www.fs.fed.us/r3/coconino/nepa/2003/new-kachina-rod-feis/14-app-d-feis.pdf>). KBF also produced visualizations of harvesting and road options for Scotia Pacific Lumber Company, Scotia, CA in preparation for hearings before the State Water Quality Control Board, June, 2001.

8. Forest Research

KB Fairhurst and RDI are providing continuing and significant contributions to the discipline of Forest Resource Planning and Management. For his PhD dissertation, KBF developed a tool to guide the location, size, pattern, and shape of resource development and/or protection. Called GEOptics Landscape Apparency, it is based on the cumulative angle of viewing towards each land plane seen from multiple viewpoints along travel corridors. GEOptics simplifies and improves the visual management and planning processes by providing a detailed GIS output layer of quantified landscape risk, and facilitates design of operations with a greater chance of meeting Visual Quality Objectives. KBF's Ph.D. dissertation is available on-line at the UBC library (electronic download: <http://hdl.handle.net/2429/28006>).

9. Professional Reviews, Audits, and Investigations

- Opportunity to be Heard re: Babine CP300_02 2020
- Sharp Hills Wind Farm submission to Alberta Utilities Commission, 2018.
- Opportunity to be Heard and Forest Appeals Commission report and hearing – Stuart Island (Interfor) 2015.
- Peer reviews of VIAs - Western Forest Products, Timberwest, and International Forest Products.

Examples of Projects

1. Visual Resource (Landscape) Inventory - KBF is accomplished at fully conducting major VLIs since 1996, when KBF conducted the first VLI in the Province to apply new Ministry standards for the entire Chilliwack Forest District:
 - Horsefly Lake and River, 2016
 - 2013-2014 Quesnel Highway 97 and Quesnel Barkerville VLI Updates.
 - 2012 Northeast (Peace) VLI update
 - 2011-2012 Okanagan-Shuswap VLI Update: Highways 97A and 97B,
 - 2011-2012 Omineca VLI Update: Nechako River, Cripple and Otterson Lakes,
 - 2006 Sea-to-Sky Frontcountry VLI, Squamish Forest District,
 - 1996 Chilliwack Forest District VLI,
2. GIS Visibility Analysis - KBF routinely uses ArcGIS visibility (cumulative viewshed) analysis in all VLIs (see 1), VIAs (see 3), and IVDs (see 7).
3. Visual Impact Assessments - KBF has been conducting 10 or more VIAs each year for the BC Timber Sales Kamloops Business Area in a continuing annual contract since 2010 in many parts of the BC interior. Other clients include Interfor, such as with the Frederick Arm VIA in 2011 and 2013 and Rendonda Island VIAs in 2011 and 2014.
4. Peer Reviews - KBF is frequently called upon to provide professional peer reviews of VIAs, such as for Western Forest Products at Lois Lake in 2011, Timberwest (2010), and International Forest Products at Stuart Island, Frederick Arm and Church House in 2013-2014, and Booker Lagoon (2008)
5. Forest Landscape Design - following the design criteria provided in the Visual Landscape Design Training Manual, KBF applies his expert understanding of design in all VIAs (see 4), IVDs (see 7), and visual landscape training/education courses (see 9).
6. Visual Simulation - KBF routinely uses state of the art Visual Nature Studio 3-D modelling together with ArcGIS 10. As expert users of the tools, simulations are incorporated in all VIAs (see 3) and IVDs (see 7). KBF has provided detailed restoration simulations for major oil sands companies (Suncor, Canadian Natural Resources). KBF also trains clients in software applications (see 9). A recent project in 2021 was to produce a 90 minute video covering the complete building of a VNS project for a forest consulting company in BC.
7. Integrated Visual Design (IVD) - KBF is accomplished at IVD preparation following the Ministry's Integrated Visual Design Procedures and Standards, such as for Interfor's Frederick Arm in 2010, BCTS Tshinakin Creek 2012, Tamihi Logging's Lake Errock in 2011, BCTS Foghorn in 2010, West Fraser's Nadina Lake IVD in 2007, and Western Forest Products' TFL 24 in 1999.
8. Viewpoint Photography - KBF routinely uses state-of-the-art geo-positioned cameras and photographic skills for all VLIs (see 1) and IVDs (see 7).
9. Visual Landscape Training - KBF was the Instructor for the Visualization Component of FRST 424, Winter 2015 and 2014, and co-taught UBC Faculty of Forestry's Visualization and Forest Design (FRST 491) course for two years in 2007 and 2008, teaching and applying Ministry design guidelines to student projects. He was GIS/visualization instructor for the course for 5 years. Ken has served been serving as Adjunct Professor in Forest Resources Management for several years.

KBF conducted 2-day training courses in Visual Nature Studio aimed specifically at integrating advanced VIA simulation techniques and visual design considerations for forest industry clients, such as for West Fraser Mills and Chartwell Forest Consultants in 2011, TDB Consultants in 2009, and Tyhee Forestry in 2008. Ken has also presented Visual Design topics at international conferences in Europe, Australia, and North America. Ken developed and conducted 2-day Visual Design training course at BCIT in 2002. KBF earlier developed and delivered the VIA Training Course for the Ministry's Vancouver Forest Region in 2000. Ken was a direct participant in the development of the Provincial Forest Landscape Management policy and procedures and Visual Landscape Inventory while with the Ministry of Forests, 1980-1983; 1985-1996.

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